



## CITY OF SAINT PAUL

*Christopher B. Coleman, Mayor*

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### TRANSPORTATION COMMITTEE OF THE PLANNING COMMISSION

Monday, October 3, 2011, 4:00 p.m. – 5:30 p.m.

*All meetings are held in the City Hall Annex 13<sup>th</sup> floor*

*Conference room at 25 West 4<sup>th</sup> Street in Saint Paul*

1. Update on TIGER III applications – 5 min  
*Allen Lovejoy, Public Works*
2. Presentation & discussion on the Arterial Transitways Corridors Study – 1 hour  
*Charles Carlson, Metro Transit*
3. 2012 Committee Meeting day/time – 5 min  
*Christina Morrison, PED*

#### *ATCS Open Houses*

- October 11, 6pm – 8:00pm at Metro State
- October 12, 6pm – 8:00pm at the Midtown Exchange (Minneapolis)
- October 13, 11am – 1:00pm at the Minneapolis Central Library

#### *Upcoming Transportation Committee Meetings*

- October 17 – Griggs Bikeway
- November 14
- December 5
- December 19

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*Meetings are open to the public. The Chair may allow five minutes for public comment (from non-committee members) at the beginning of each agenda as needed. Additional time may be allocated for comments or further discussion at the discretion of the Chair. Meetings will be cancelled if there is not a quorum expected, or if there are no agenda items.*

## Transportation Committee Staff Report

*Committee date: 10/3/11*

|   |  |
|---|--|
| <b>Project Name</b>                       | <b>Arterial Transitway Corridors Study</b>   |
| Geographic Scope                          | In St. Paul: Snelling/Ford Parkway, E. and W. 7 <sup>th</sup> Streets, Robert Street, and Marshall Avenue from the river to Snelling Avenue/Spruce Tree  |
| Ward(s)                                   | 2, 3, 4, 6, 7  |
| District Council(s)                       | 2, 3, 4, 5, 9, 10, 12, 11, 13, 14, 15, 17  |
| Project Description                       | The ATCS focuses on developing the concept of arterial bus rapid transit (BRT). BRT involves a combination of service and facility improvements along existing high ridership local bus corridors in urban areas. Bus-rapid transit provides improved speed, frequency, and reliability by upgrading bus and station quality. Eleven arterial corridors are included: West Broadway Avenue, Central Avenue, Snelling Avenue, Robert Street, East Seventh Street, West Seventh Street, Nicollet Avenue, Chicago Avenue, American Boulevard, Hennepin Avenue, and Lake Street. |
| Project Contact                           | Charles Carlson  |
| Contact email/phone                       | <a href="mailto:charles.carlson@metc.state.mn.us">charles.carlson@metc.state.mn.us</a> , (612) 349-7639  |
| Lead Agency/Department                    | Metro Transit, Service Development   |
| Purpose of Project/Plan                   | Develop service and facilities plan to improve transit speed, service reliability, customer experience, and connections between major destinations on eleven high frequency local bus corridors.   |
| Planning References                       | Comp Plan Policy T2.6, T2.9, T4.1  |
| Project stage                             | Planning   |
| General Timeline                          | Evaluate corridor performance in Fall 2011, Prioritize and Rank Nov 2011 to Feb 2012, Post-study development and implementation 2012 and later.  |
| District Council position (if applicable) | NA   |
| Level of Committee Involvement            | Inform, gather input   |
| Previous Committee action                 | None   |
| Level of Public Involvement               | Inform, gather input   |
| Public Hearing                            | No- Public informational meetings scheduled October 11, 12, 13<br>October 11 meeting Metropolitan State University 6pm-8pm   |
| Public Hearing Location                   | NA   |
| Primary Funding Source(s)                 | Metropolitan Council Unified Planning Work Program Corridor Study  |
| Cost                                      | Study by Metropolitan Council, \$324,000 cost  |

|  |                     |
|--|---------------------|
| Staff recommendation                   | NA - briefing only  |
| Action item requested of the Committee | No action requested |

# Arterial Transitway Corridors Study Presentation

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## Purpose of Study

The focus of this study are eleven urban transitway corridors in Minneapolis and St Paul, and surrounding communities.

The project has developed concept-level facilities and service plans. These concepts focus on improving speed, reliability, enhancing the transit customer experience and creating faster connections between major destinations in the region.

This is the region's transportation policy plan, transitway map. The focus of this project is the shorter, BRT lines closer to the region's core. A map shows the following transitways:

- Complete/Under Construction/Final Design or Preliminary Engineering: Hiawatha, Central, I-394 Hot Lane, Cedar BRT, I-35W BRT, Northstar, Southwest LRT
- Develop as LRT/Busway/Highway BRT or Commuter Rail: Gateway, Red Rock, Midtown, Bottineau, Central Avenue, I-35W North, Rush Line, Highway 36
- Develop as Arterial BRT: I-494 American Boulevard, Nicollett Avenue, Chicago Avenue, Snelling Avenue, W. 7<sup>th</sup> Street, E. 7<sup>th</sup> Street, Robert Street, E. 7<sup>th</sup> Street, Central Avenue, Broadway Avenue
- Regional Multimodal hubs: Union Depot (Saint Paul) and the Interchange (Minneapolis)

The map also shows a number of unlabeled express bus corridors with transit advantages.

Taking a closer look, here are the eleven corridors studied through the project. The corridors are high ridership bus lines that connect major destinations within the region as the largest component of the transit network. The routes serving these 11 corridors carry 90,000 passengers on an average weekday, half of Metro Transit's urban local bus ridership.

The lines also play a role in supporting and connecting to fixed guideway transitways such as LRT or BRT lines, planned and under construction. A map shows the corridors being studied: West Broadway Avenue, Central Avenue, Snelling Avenue, Robert Street, East Seventh Street, West Seventh Street, Nicollet Avenue, Chicago Avenue, American Boulevard, Hennepin Avenue, and Lake Street.

## Purpose and Need Elements on Arterial Corridors

### 1. Speed and reliability improvements are required to decrease costs and improve ridership

Slow travel speeds and on-time performance are a challenge on these routes in both peak and off-peak periods.

Past transit studies have shown high potential ridership growth would be possible with more competitive travel time and improved reliability. Customer and public survey data shows that a faster more reliable trip is the #1 desired feature for transit improvement.

Given high ridership demand on the study corridors, it is also very expensive to operate at these slow speeds and the cost to add new service is high. A faster trip would allow service frequency improvement at a lower marginal cost.

By identifying the factors that contribute to slow transit speed, we can begin to make improvements to minimize unnecessary delay. The biggest factors we've seen are delays from passenger boarding, red light delays, and traffic delay.

A pie chart shows that Route 21 delay factors include: Boarding (46% of time), Red lights (18%), Traffic (5%), Other (6%), and that the bus is only moving the remaining 25% of the time.

Another chart shows Bus Speed – Lake Street Route 21, Uptown to Hiawatha. At 7 am, bus speeds are 9.2 and 6.4 mph (westbound and eastbound respectively). Speeds then dip to 6.4 and 5.1 mph in the afternoon peak, and then increase to 8.7 and 7.0 mph again by midnight.

## **2. Corridor transit services are a critical element of the region's transportation system**

These corridors also have a major role in the transit system, and together they form a critical element of the region's transportation system.

They feed into the fixed guideway LRT and BRT transit system, but they have an important transportation role in of themselves. Study corridors are also the focus of development plans and reinvestment in the region, especially at major nodes and intersections of lines. The study corridors serve a broad section of the region's population, especially minority, low-income, and zero-car households.

Buses represent a significant component of each corridor's ability to move people. Compared to a relatively light footprint- just 2-5 percent of vehicle trips; buses carry a large percentage of people moving in the study corridors. This ranges from 20-40 percent of people moved at various points in the study corridors. Finally, stations and facilities sometimes lack adequate protection for passengers and we also seek to improve customer waiting facilities to become commensurate with transit's role on each corridor.

A bar chart shows that for a sample roadway, 10,500 cars make up 96% of use vs. 428 bus trips, or 4%. On that roadway however, person throughput equals 13,500 people in cars (only 63%) vs. 8,100 people on buses (37%).

## **Study Goals**

There are two major goals associated with the rapid bus concept.

The first goal is to provide faster service. The second goal is to improve the transit experience. Part of this comes from a faster ride, but other improvements are envisioned, particularly with respect to the quality of station and waiting experiences.

Together, these will contribute to an effective and attractive system, that will increase ridership, generate an improved perception of transit, and support development plans.

## **Rapid Bus Improvements**

The improvements that would be implemented for a rapid bus line have many components, but can be categorized into two areas. The rapid bus system would have a consistent identity regardless of corridor. A common station design, fare collection system, vehicle look, and system identity would set the system apart as a premium transit service. This is designed to provide a consistent identity and experience regardless of which line a customer uses.

On the other side, each of these corridors is unique. While stations would have a similar design, they will have different sizes to fit into different contexts and demand levels. They will also have runningway and signal improvements that respond to the roadway context and transit service levels that vary with demand and remaining local service. These differences allow the mode to respond to ROW, traffic, and transit demand while still providing a premium service consistently.

## **How does Rapid Bus achieve faster service?**

Now we'll look at what these specific investments would entail, so we can see how the main goals would be achieved. To achieve faster service there are four areas to be addressed.

1. Less waiting: improved frequency, better on-time performance
2. Signal Traffic and Delay: signal priority, far-side stops, curb extensions
3. Boarding delay: pre-pay boarding, all-door boarding, and raised curbs
4. Fewer stops: 2 to 3 stations per mile, service activity centers

## **How does Rapid Bus achieve an improved experience?**

To achieve an improved experience there are 4 areas to be addressed.

1. Service Reliability: better on-time performance
2. Customer info: real time signs, schedule info, wayfinding signs, on-bus info, branding
3. Transitway stations: enhanced maintenance, security features, station-level lighting, heated shelters, curb extensions, ticket vending, branding
4. Specialized vehicles: dedicated fleet, low-floor buses, clean emissions, unique look

## **Station Pylon Study Concept**

This slide shows a station marker and station features that would be common to all stop locations. This station configuration would be consistently applied. The station pylon concept shows the following features integrated into a column with a canopy: light/heat, real-time sign, ticket vending, a station marker, station signage, and schedule & wayfinding info. The drawing is a only to study massing; the design would be completed in a future engineering stage.

## Medium Station Concept Design

This shows how that consistent station marker would be applied to different sizes. The length of the shelter would vary to denote the size of the station. The same station pylon is shown with a longer shelter/canopy area.

Sample design on the street

This is a photograph of 7th & Maria along the East 7th corridor as it exists today. The next photo is the same photo with a potential transitway improvement. The sidewalk has been extended to provide for the transit station, as well as other amenities such as bike parking and the station pylon and shelter.

## Rapid Bus Experiences in Other Regions

The benefits of Rapid Bus are demonstrated by other regions. We've looked at similar systems in Los Angeles, New York, Kansas City, Seattle, and San Diego. Most of these regions have significant rail and bus transit systems, and are increasingly investing in rapid bus improvements to link their rail lines together and to improve the performance of productive urban corridors.

Given the travel time savings and ridership increases, the capital costs compare favorably with streetcar costs, generally \$20-40 M/ mile or LRT costs of \$60-100M per mile.

The arterial transitway corridors study expects performance in-line with the benefits seen elsewhere, though costs may be slightly higher due to added features in the Metro Transit concept plan.

| Component            | Typical Results       |
|----------------------|-----------------------|
| <b>Travel Time</b>   | 15–25+%faster travel  |
| <b>Ridership</b>     | 20–40+% increase      |
| <b>Capital Costs</b> | \$1 –\$3 million/mile |

## Study Team and Project Partners

This summarizes the intent of the study and the features of the Rapid Bus mode, and now I will focus on the study process and project team.

Metro Transit is leading this study, with strong support from the Metropolitan Council and a multidisciplinary consultant team.

We have also engaged partners in the project at the County, City, and agency level.

These partnerships will result in stronger plans and informed partners as promising projects advance.

## Stakeholder Workshop-June 30, 2011

A major input phase came from a stakeholder workshop on June 30. The workshop had an education phase to provide background on the study and the individual corridors, followed by a hands-on workshop and follow-up survey. Local community policymakers and technical staff represented each agency, county, and city along the study corridors. This workshop was invaluable for concept design efforts that followed. This slide shows several photos of participants at a workshop.

## Upcoming public meetings and presentations

The results of those concept design efforts will be shared in upcoming public meetings. Three meetings are scheduled, and additional meetings may be planned in coordination with projects led by others.

- Public meetings hosted by study team:
  - October 11, 6pm –8:00pm -Metro State University (St. Paul)
  - October 12, 6pm –8:00pm-Midtown Exchange (South Minneapolis)
  - October 13, 11am –1:00pm-Central Library (Downtown Minneapolis)
- Second round of meetings with results and prioritization in January 2012
- Participation in meetings by others: Bottineau Transitway-October-November 2011?

## Next Steps in Arterial Transitway Corridors Study

Two phases of the study are remaining, including performance evaluation, followed by prioritization and ranking of best-fit corridors in early 2012.

After the study is complete, the results will be used in more advanced studies planned for 4 corridors.

Other corridors may move directly into design and implementation, while still others may not provide the best fit or timing for a rapid bus investment.

## Integration with other studies

These corridors are planned for detailed and extensive alternatives analyses. This project will inform those studies by providing some understanding of existing conditions as well as a template for an enhanced bus alternative concept.

- Four+ corridors slated for more study and Alternatives Analysis
  - Nicollet/Central AA (Minneapolis)
  - Midtown AA (Metro Transit)
  - Robert Street AA (Dakota County)
  - Potential St. Paul Streetcar Study
- ATCS/Rapid Bus Concept will inform these studies:
  - Existing Conditions Information
  - Enhanced bus alternative concept

## Next Steps Toward Rapid Bus Implementation

The corridors scheduled for AA will move ahead on their own, but other study corridors may proceed more quickly toward implementation. If clear frontrunner corridors are identified and agreed upon in 2012, corridor design work could begin and the first lines could begin service as soon as 2014. Additional corridors would follow as called for in the Transportation Policy Plan.